# PUBLIC HEALTH REPORTS.

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## COMMON DRINKING CUPS AND COMMON TOWELS.

### FINAL DATE FOR COMPLIANCE WITH AMENDMENTS OF OCTOBER 30 AND DECEMBER 9, 1912, TO THE INTERSTATE QUARANTINE REGULATIONS.

1912.
Department Circular 59.
Bureau of Public Health Service.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
*Washington, December 19, 1912.*

*To medical officers of the Public Health Service, State and local health authorities, and others concerned:*

The final date for compliance with paragraphs 13 and 14, article 3, General Regulations, Interstate Quarantine Regulations, is hereby fixed at March 1, 1913.

The paragraphs in question read as follows:

Paragraph 13. Common carriers shall not provide in cars, vehicles, vessels, or conveyances operated in interstate traffic, or in depots, waiting rooms, or other places used by passengers traveling from one State or Territory or the District of Columbia to another State or Territory or the District of Columbia, any drinking cup, glass, or vessel for common use: *Provided*, That this regulation shall not be held to preclude the use of drinking cups, glasses, or vessels which are thoroughly cleaned by washing in boiling water after use by each individual, nor shall it be held to preclude the use of sanitary devices for individual use only.

Paragraph 14. Common carriers shall not provide in cars, vehicles, vessels, or conveyances operated in interstate traffic, or in depots, waiting rooms, or other places used by passengers traveling from one State or Territory or the District of Columbia to another State or Territory or the District of Columbia, any towel for use by more than one person: *Provided*, That towels may be used again after having been sterilized with boiling water.

FRANKLIN MACVEAGH,
*Secretary.*

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## MALARIAL FEVERS—PREVALENCE AND GEOGRAPHIC DISTRIBUTION IN ALABAMA.

By R. H. VON EZDORF, surgeon, United States Public Health Service.

This study covers morbidity and mortality records and the epidemiology of malaria in Alabama.

The first available statistics which were studied were of the admissions of cases into the United States Marine Hospital at Mobile during the 10 years 1902 to 1911, inclusive. During this period there was a total of 685 cases of malarial fever treated. Of this number 450 cases were diagnosed as intermittent malarial fever, and 235 as remittent. Among these there were 3 deaths, of which 1 death was due to gumma of the brain. This gives a case fatality rate of about three-tenths of 1 per cent (0.3).

Classified according to race, 540 of the cases occurred among white and 145 among colored patients. A little more than half of the cases, 346 in number, occurred in persons between 20 and 29 years of age, the ages of admission ranging between 15 and 78 years.

The records further showed that the disease prevailed throughout the year, and that during the months of June to November the admissions were greatly increased. These admissions by months for the 10 years were as follows: January, 20; February, 17; March, 34; April, 36; May, 37; June, 66; July, 80; August, 102; September, 111; October, 90; November, 62; December, 30; total, 685.

According to years, these admissions were: 1902, 54; 1903, 39; 1904, 42; 1905, 65; 1906, 44; 1907, 67; 1908, 90; 1909, 109; 1910, 100; 1911, 77.

During April, 1912, a visit was made to the State health office at Montgomery, for the purpose of studying the mortality records of malarial fevers in the State. Dr. W. H. Sanders, State health officer, and Dr. H. G. Perry, in charge of the morbidity and mortality records, rendered every assistance for the study of available records and have assisted me in other ways which facilitated the obtaining of morbidity reports, to be mentioned later.

The only available statistics of deaths were for the years 1910 and 1911, and these were said to be incomplete. Maps showing the number of deaths reported in each county of the State will be found on pages ———.

The reported deaths may be summarized as follows:

For the year 1910:

| | |
|---|---|
| Deaths from all causes reported in the State— | |
| Whites | 7,609 |
| Colored | 7,443 |
| Total | 15,052 |
| Deaths reported as due to malarial fever— | |
| Whites | 185 |
| Colored | 282 |
| Total | 467 |

The deaths reported as due to malarial fever were, therefore, 2.4 per cent of the total reported deaths among the whites and 3.8 per cent of those reported among the colored population, averaging 3.1 per cent of the total deaths reported for the State. The malarial mortality rate was 0.213 per 1,000 population, the population for the State according to the census for 1910 being 2,138,093.

For the year 1911:

| | |
|---|---|
| Deaths from all causes reported in the State— | |
| Whites | 7,418 |
| Colored | 7,210 |
| Total | 14,628 |
| Deaths reported as due to malarial fever— | |
| Whites | 176 |
| Colored | 261 |
| Total | 437 |

This represents a reported mortality from malarial fever of 2.4 per cent of the total mortality of whites and 3.6 per cent of the total of colored, or about 3 per cent of the total deaths reported for the State.

It will be noted from these tables that for the two years, 297 of a total of 904, or 32.8 per cent, deaths from malarial fever occurred in children during the first decade of life, and that 45 per cent of the total were for the first two decades of life.

The deaths, arranged according to the sex and color of the decedents, were as follows:

| Sex and color. | 1910 | 1911 |
|---|---|---|
| White: | | |
| Male | 96 | 84 |
| Female | 89 | 92 |
| Colored: | | |
| Male | 125 | 128 |
| Female | 157 | 133 |
| Total | 467 | 437 |

The deaths among white males and white females for the two years were about equal in number, whereas there was a slight excess of deaths of colored females over colored males.

Using the census of 1910 for the population, the reported mortality rate from malarial fever was .204 per 1,000 population for the year.

The deaths arranged according to the ages of the decedents were as follows:

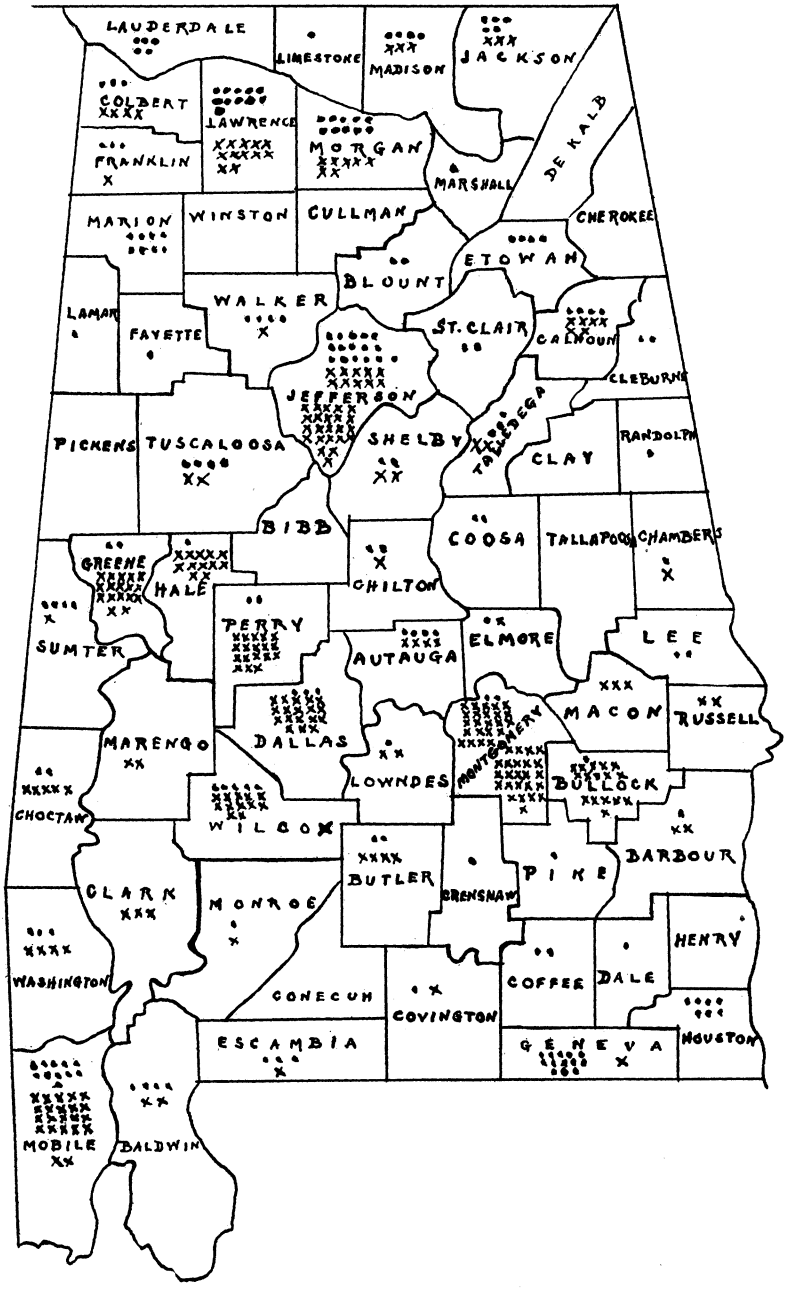
| Ages. | 1910 | 1911 | Ages. | 1910 | 1911 |
|---|---|---|---|---|---|
| Under 1 year | 45 | 41 | 40 to 50 years | 32 | 32 |
| 1 to 2 years | 28 | 19 | 50 to 60 years | 42 | 34 |
| 2 to 5 years | 44 | 45 | 60 to 70 years | 32 | 29 |
| 5 to 10 years | 37 | 38 | 70 to 80 years | 29 | 21 |
| 10 to 15 years | 30 | 25 | 80 to 90 years | 14 | 12 |
| 15 to 20 years | 27 | 28 | Not stated | 8 | 16 |
| 20 to 30 years | 56 | 59 | | | |
| 30 to 40 years | 43 | 38 | Total | 467 | 437 |

The deaths arranged according to the month of occurrence were as follows:

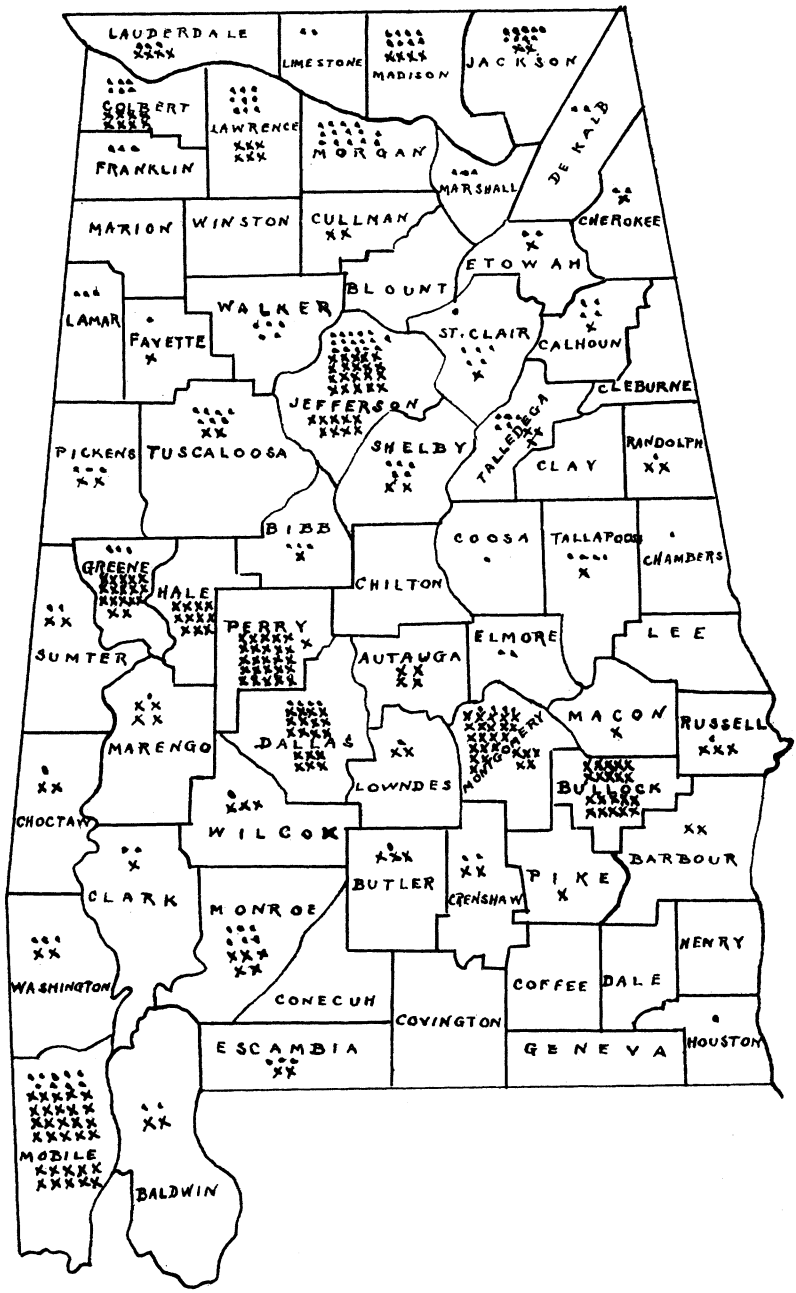
| Month. | 1910 | 1911 | 1912 | Remarks. |
|---|---|---|---|---|
| January | 11 | 10 | 9 | |
| February | 6 | 3 | 9 | |
| March | 9 | 10 | 9 | |
| April | 16 | 12 | 20 | |
| May | 26 | 28 | 20 | |
| June | 24 | 32 | 27 | |
| July | 47 | 42 | 59 | |
| August | 98 | 66 | 82 | |
| September | 89 | 75 | 114 | |
| October | 82 | 104 | 101 | Not including Clay County. |
| November | 44 | 37 | ..... | |
| December | 15 | 18 | ..... | |
| Total | 467 | 437 | ..... | |

The preceding table shows reported deaths from malarial fever occurring throughout the year, the numbers being smallest for the months of January, February, and March, and gradually increasing, the largest numbers occurring during August, September, and October.

The mortality statistics for malarial fevers during the present year, 1912, were sent me by Dr. H. G. Perry.




MAP NO. 1.—Showing the deaths reported in Alabama as due to malaria during the year 1910. Deaths among the white population are indicated by dots and number 185; those among the colored population are indicated by X and number 282.




MAP NO. 2.—Showing the deaths reported in Alabama as due to malaria during the year 1911. Deaths among the white population are indicated by dots and number 176; those among the colored population are indicated by X and number 261.

For 1910 no deaths from malarial fever were reported from 10 counties, and for 1911, 12 counties gave no report of death from this cause. For the two years, 1910 and 1911, only 4 counties out of the total of 67 counties—namely, Clay, Conecuh, Henry, and Winston—had no malarial deaths reported.

With the object of obtaining information regarding the prevalence and geographic distribution of malarial fever in the State, franked reply postal cards were mailed to the physicians of the State on October 1, November 1, and December 1, calling for certain information for the preceding months; that is, for September, October, and November. The returns for September and October will be given.

There was a total of 579 reply cards received in October from physicians in 326 cities, towns, or localities and 457 reply cards from 285 places in November.

The reports received for September represent 25.3 per cent of the total of 2,281 cards mailed, and for October, 20.1 per cent of a total of 2,270 mailed.

There were 13 localities in 11 counties reported in October for September as free from malarial fever, and 14 localities in 9 counties so reported in the November reports for the month of October.

The following is a summary of the reports received for the two months, September and October:

*Cases of malarial fever treated.*

| | September. | October. |
|---|---|---|
| Diagnosis confirmed:[1] | | |
| Whites | 1,986 | 1,222 |
| Colored | 1,296 | 863 |
| Diagnosis not confirmed: | | |
| Whites | 4,160 | 2,289 |
| Colored | 3,567 | 1,529 |
| Color not stated | 255 | 360 |
| Total | 11,354 | 6,263 |

[1] These reports contain all cases reported as "some," "part of them," "yes," in reply to the question, "Was diagnosis of cases confirmed microscopically?"

*Types of infection reported.*

| | September. | October. |
|---|---|---|
| | *Counties.* | *Counties.* |
| Tertian, quartan, and estivo-autumnal | 41 | 36 |
| Tertian and quartan | 4 | 3 |
| Tertian only | 5 | 4 |
| Quartan only | | 1 |
| Tertian and estivo-autumnal | 15 | 22 |
| None | 2 | 1 |
| Total | 67 | 67 |

The report for September would show that 11,354 cases of malarial fever were treated, which is equal to one-half of 1 per cent of the population of the State, and these were reported by 579 physicians, or 25.3 per cent of those addressed in the State. The State health office received reports of 114 deaths from malarial fever during Sep-

tember. If these figures are accepted and the proportions carried out, the case mortality from malarial fever for the month of September was one-fourth of 1 per cent of the cases; that is, 1 in 400 cases of malarial fever terminated fatally.

The report of 6,263 cases by 20.1 per cent of physicians in the State for the month of October represents a morbidity rate of nearly 0.3 per cent of the population of the State, and with 101 deaths from this cause, 1 death in 310 persons attacked.

The reports of cases occurring in children under 15 years of age vary greatly, the average of those for September being 37.2 per cent of all cases where percentages were given; for October 272 physicians reported the occurrence in children ranging from 2 per cent to 100 per cent of all cases occurring in their practice.

The reports of 301 physicians for September and 117 for October would indicate that in 57 counties there are children undeveloped mentally and physicaly on account of malarial cachexia; the counties from which reports were negative on this question were Butler, Calhoun, Clay, Cleburne, Coosa, De Kalb, Perry, Randolph, St. Clair, and Tallapoosa.

There were 312 physicians reporting for September and 245 for October the occurrence of chronic cases of malarial fever in their practice. These covered every county in the State except two—Butler and Randolph.

In every county in the State the reports state that there are swamps or poorly drained lands. Mosquitoes were reported as present in all counties for which information was given on the subject. For the two months they were noted as follows:

| | Counties. |
|---|---|
| One or more reports on Anophilines | 47 |
| Culex | 3 |
| Unknown | 17 |
| Total | 67 |

The State board of health laboratory has been making blood examinations for physicians who send blood smears. The records furnished me by the State bacteriologist, Dr. Moss, show the following results of examinations made:

Year 1908, 4 counties, 14 examinations, 2 positive; year 1909, 10 counties, 47 examinations, 1 positive; year 1910, 14 counties, 49 examinations, 3 positive; year 1911, 23 counties, 101 examinations, 5 positive; year 1912, January to April, 14 counties, 60 examinations, 3 positive.

No attempt to classify the findings of the forms of parasites was made.

The morbidity reports here given indicate the widespread prevalence of malarial fever in the State or, rather, give a record of the number of cases treated as such. The average number of such patients was 19.6 for each physician reporting for September and 13.7 for each physician reporting for October.

While doubt will, of course, be cast to some extent on the accuracy of those diagnoses made without the microscope, yet I believe we should accept in such a study, in the majority of instances, the diagnoses made on a clinical basis.

The September reports showed that 178 physicians of the 579 had used or had availed themselves of the use of the microscope in making

their diagnoses, and for October there were 120 out of the 436 physicians who reported the use of the microscope to confirm their diagnoses.

There is no question that accurate diagnoses are often made on clinical evidence and, on the other hand, that the parasite is not always found even on a careful microscopical examination of the blood.

It was determined that the index of malarial infection be first studied in Mobile. It had been observed that a number of sailors employed on river vessels plying between Mobile and points on the Alabama and Tombigbee Rivers frequently suffered attacks of malarial fever, principally of the intermittent (tertian) type. It is impossible to state definitely whether sailors contract their infection at Mobile or along the Alabama River. However, Mobile is a home port, so that these sailors are in many instances residents of Mobile.

A circular letter was mailed to all physicians in Mobile requesting them to make blood smears from children under 16 years of age and send them to me for examination. A brief history, giving the name, age, sex, color, nativity, residence, and previous history of malaria, was requested to accompany each slide. But few physicians responded.

Through Dr. Seale Harris an arrangement was made to examine 24 pupils attending a school, among whom two were found to be tertian gamete carriers.

Inspections for breeding places for mosquitoes were also made in the city, and many such places were found in the unpaved sections. Anopheline larvæ were collected from poorly drained gutters. These were hatched and found to be *Anopheles maculipennis*.

The following is a report of blood examinations made during the months of March, April, and May, and the latter part of November:

| | March, April, and May. | November. |
|---|---|---|
| According to ages: | | |
| Less than 1 year | 1 | ..... |
| 1 to 2 years | 5 | ..... |
| 3 to 4 years | 9 | 1 |
| 5 to 9 years | 23 | 12 |
| 10 to 14 years | 21 | 11 |
| 15 to 16 years | 15 | 1 |
| 17 to 20 years | 9 | 1 |
| 21 years and over | 17 | 6 |
| | 100 | 32 |
| According to sex and color: | | |
| White— | | |
| Male | 26 | ..... |
| Female | 48 | ..... |
| Colored— | | |
| Male | 17 | 20 |
| Female | 9 | 12 |
| | 100 | 32 |

The previous history of attacks of malarial fever, given as several weeks to several years ago, were 41 positive and 59 negative of those examined earlier in the year, and 27 positive and 5 negative of those examined the last week in November.

The result of the 132 examinations showed malarial parasites in 23 individuals, 15 of these in the first 100 and 8 in the last 32 examined. These were as follows: Crescents in 6; tertian gametes in 11; estivo-autumnal young forms in 3; tertian young forms in 3; total, 23.

The details may be briefly given as follows:

Crescents found in 1 colored male, age 3 years; 1 colored female, age 7 years; 1 white female, age 8 years; 1 colored female, age 13 years; 1 colored female, age 8 years; 1 colored male, age 7 years.

Tertian gametes found in 1 white male, age 13 years; 5 white females, ages 15, 17, 21, 29, and 43 years; 4 colored males, ages 7, 11, 13, and 54 years; 1 colored female, age 6 years.

Estivo-autumnal, active forms, found in 1 colored male, age 3 years, no active symptoms; 1 white female, age 11 years, active symptoms; 1 white female, age 12 years, no active symptoms.

Tertian, young (active) forms, found in 1 colored male, age 8 years, active symptoms; 1 white male, age 34 years, active symptoms; 1 colored male, age 10 years, not diagnosed.

There were, therefore, 13 infected out of a total of 58 colored persons examined, 6 with estivo-autumnal and 7 with tertian parasites; and 10 out of the 74 white persons examined, 3 with estivo-autumnal and 7 with tertian infections.

Regarding the types of infection, during the two years of service at the Marine Hospital at Mobile I have confirmed microscopically in patients who clearly contracted malarial fever in the State of Alabama the tertian and estivo-autumnal types as most frequent. Only three cases of quartan infection were encountered, one of these in a white person in December, 1910, and two in colored individuals in October, 1912. The reports from physicians throughout the State would indicate that the quartan type is quite prevalent, and a number report the confirmation on microscopic findings.

My personal experience and observation has been that the quartan type is quite rare. It appears that an investigation may prove of interest, and that the species of anophelines should be particularly studied in those counties where this form is being reported.

## CONCLUSIONS.

1. All forms of malarial fevers prevail in the State of Alabama.
2. Morbidity reports indicate that in September, 1912, about 1 person for every 50 population suffered an attack of malarial fever, and during October 1 person in 67 had an attack.
3. The types of infection, in the order of prevalence, are: Tertian, estivo-autumnal, and quartan.
4. The chronic type of malarial infection is proportionately greater in the colored race than in the white.